

AMENDMENTS TO THE CLAIMS

1. (Cancelled)

2. (Currently Amended) ~~A sensor according to claim 1 wherein:~~ A sensor comprising:

one or more light-projecting components each having a light-projecting surface, said one or more light-projecting components being operable to irradiate light from said light-projecting surface; and

one or more light-receiving components each having a light-receiving surface, said one or more light-receiving components being operable to receive at least a portion of the light irradiated from at least one of said one or more light-projecting components, wherein the received light is incident on said one or more light-receiving components receiving the light after the light has been reflected; wherein:

said sensor is operable to detect one or more objects in one or more overlapping zones at which at least one projected light optical path of the light irradiated by at least one of said one or more light-projecting components at least partially overlaps at least one received light optical path of the light incident on at least one of said one or more light-receiving components;

said sensor further comprises one or more optical path varying means for varying at least one of the at least one projected light optical path and the at least one received light optical path so as to physically vary at least one of the one or more overlapping zones; and

at least one of said optical path varying means carries out an adjustment of optical sensitivity by at least one of increasing at least one extent of at least one of the one or more overlapping zones when said sensor carries out detection with respect to at least one distant zone, and decreasing at least one extent of at least one of the one or more overlapping zones when said sensor carries out detection with respect to at least one proximate zone;

at least one of the said optical path varying means is such that comprises one or more translucent curved bodies is or are disposed in at least one of the at least one projected optical path and and/or the at least one received light optical path or paths;

at least one of ~~the said one or more~~ translucent curved ~~body or bodies~~ comprises one or more flat components and one or more curved components formed in a continuous fashion;

at least one of ~~the said one or more~~ light-projecting ~~component or components~~ and at least one of ~~the said one or more~~ light-receiving ~~component or components~~ are arrayed in ~~the a~~ same order as at least one of ~~the said one or more~~ flat ~~component or components~~ and at least one of ~~the said one or more~~ curved ~~component or components~~ formed in the continuous fashion; and

when ~~carrying said sensor carries~~ out detection with respect to at least one distant zone, at least one of ~~the said one or more~~ light-projecting ~~component or components~~ and at least one of ~~the said one or more~~ light-receiving ~~component or components~~ are made to at least one of move and/or and rotate from at least one of the said one or more flat component or components and toward at least one of the said one or more curved component or components while maintaining at least one a distance between at least a portion of the said light-projecting and light-receiving surfaces of the said one or more light-projecting and light-receiving components.

3. (Currently Amended) ~~A sensor according to claim 1 wherein:~~ A sensor comprising:

one or more light-projecting components each having a light-projecting surface, said one or more light-projecting components being operable to irradiate light from said light-projecting surface; and

one or more light-receiving components each having a light-receiving surface, said one or more light-receiving components being operable to receive at least a portion of the light irradiated from at least one of said one or more light-projecting components, wherein the received light is incident on said one or more light-receiving components receiving the light after the light has been reflected; wherein:

said sensor is operable to detect one or more objects in one or more overlapping zones at which at least one projected light optical path of the light irradiated by at least one of said one or more light-projecting components at least partially overlaps at least

one received light optical path of the light incident on at least one of said one or more light-receiving components;

said sensor further comprises one or more optical path varying means for varying at least one of the at least one projected light optical path and the at least one received light optical path so as to physically vary at least one of the one or more overlapping zones; and

at least one of said optical path varying means carries out an adjustment of optical sensitivity by at least one of increasing at least one extent of at least one of the one or more overlapping zones when said sensor carries out detection with respect to at least one distant zone, and decreasing at least one extent of at least one of the one or more overlapping zones when said sensor carries out detection with respect to at least one proximate zone;

at least one of the said optical path varying means is such that comprises one or more prismatic bodies is or are disposed in at least one of the at least one projected optical path and and/or the at least one received light optical path or paths;

at least one of the said one or more prismatic body or bodies presenting presents a gradually increasing angle or angles as one goes from at least one side thereof to at least one other side thereof;

at least one of the said one or more light-projecting component or components and at least one of the said one or more light-receiving component or components are arrayed in the a same order as the at least one side thereof and the at least one other side thereof; and

when carrying said sensor carries out detection with respect to at least one distant zone, at least one of the said one or more light-projecting component or components and at least one of the said one or more light-receiving component or components are made to at least one of move and/or and rotate from the at least one side thereof and toward the at least one other another side thereof while maintaining at least one a distance between at least a portion of the said light-projecting and light-receiving surfaces of the said one or more light-projecting and light-receiving components.

4. **(Currently Amended)** ~~A sensor according to claim 1 wherein:~~ A sensor comprising:

one or more light-projecting components each having a light-projecting surface, said one or more light-projecting components being operable to irradiate light from said light-projecting surface; and

one or more light-receiving components each having a light-receiving surface, said one or more light-receiving components being operable to receive at least a portion of the light irradiated from at least one of said one or more light-projecting components, wherein the received light is incident on said one or more light-receiving components receiving the light after the light has been reflected; wherein:

said sensor is operable to detect one or more objects in one or more overlapping zones at which at least one projected light optical path of the light irradiated by at least one of said one or more light-projecting components at least partially overlaps at least one received light optical path of the light incident on at least one of said one or more light-receiving components;

said sensor further comprises one or more optical path varying means for varying at least one of the at least one projected light optical path and the at least one received light optical path so as to physically vary at least one of the one or more overlapping zones;

at least one of said optical path varying means carries out an adjustment of optical sensitivity by at least one of increasing at least one extent of at least one of the one or more overlapping zones when said sensor carries out detection with respect to at least one distant zone, and decreasing at least one extent of at least one of the one or more overlapping zones when said sensor carries out detection with respect to at least one proximate zone;

at least one of the said optical path varying means is such that comprises one or more mirror bodies is or are disposed in at least one of the at least one projected optical path and and/or the at least one received light optical path or paths;

at least one of the said one or more mirror body or bodies comprises one or more flat components and one or more curved components formed in a continuous fashion;

at least one of the said one or more light-projecting component or components

and at least one of ~~the~~ said one or more light-receiving ~~component or~~ components are arrayed in ~~the~~ a same order as at least one of ~~the~~ said one or more flat ~~component or~~ components and at least one of ~~the~~ said one or more curved ~~component or~~ components formed in the continuous fashion; and

when ~~carrying~~ said sensor carries out detection with respect to at least one distant zone, at least one of ~~the~~ said one or more light-projecting ~~component or~~ components and at least one of ~~the~~ said one or more light-receiving ~~component or~~ components are made to at least one of move and/or and rotate from at least one of ~~the~~ said one or more flat ~~component or~~ components and toward at least one of ~~the~~ said one or more curved ~~component or~~ components while maintaining ~~at least one a~~ distance between at least a portion of ~~the~~ said light-projecting and light-receiving surfaces of ~~the~~ said one or more light-projecting and light-receiving components.

5. (Currently Amended) ~~A sensor according to claim 1 wherein:~~ A sensor comprising:

one or more light-projecting components each having a light-projecting surface, said one or more light-projecting components being operable to irradiate light from said light-projecting surface; and

one or more light-receiving components each having a light-receiving surface, said one or more light-receiving components being operable to receive at least a portion of the light irradiated from at least one of said one or more light-projecting components, wherein the received light is incident on said one or more light-receiving components receiving the light after the light has been reflected; wherein:

said sensor is operable to detect one or more objects in one or more overlapping zones at which at least one projected light optical path of the light irradiated by at least one of said one or more light-projecting components at least partially overlaps at least one received light optical path of the light incident on at least one of said one or more light-receiving components;

said sensor further comprises one or more optical path varying means for varying at least one of the at least one projected light optical path and the at least one received

light optical path so as to physically vary at least one of the one or more overlapping zones;

at least one of said optical path varying means carries out an adjustment of optical sensitivity by at least one of increasing at least one extent of at least one of the one or more overlapping zones when said sensor carries out detection with respect to at least one distant zone, and decreasing at least one extent of at least one of the one or more overlapping zones when said sensor carries out detection with respect to at least one proximate zone;

at least one of the said optical path varying means is such that comprises one or more rotatable shafts for rotating at least one of the said one or more light-projecting component or components and at least one of the said one or more light-receiving component or components, said one or more rotatable shafts being is or are disposed between at least one of the said one or more light-projecting component or components and at least one of the said one or more light-receiving component or components; and

when carrying said sensor carries out detection with respect to at least one distant zone, at least one of the said one or more light-projecting component or components and/or at least one of the said one or more light-receiving component or components is or are is/are rotated in at least one direction such as which would tend to increase the degree to which at least one of the said light-projecting surface of said at least one of said one or more light-projecting components or surfaces faces at least one of the said light-receiving surface or surfaces of said at least one of said one or more light-receiving components.